

REMARKS

Claims 1-20 were pending in the above-identified application when last examined. Claims 1 and 11 are amended as indicated above. Claim 19 is canceled, and claim 21 is added.

Claims 1, 3, 5-11, 13-18, and 20 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Pat. No. 6,870,567 (Funston). Applicant respectfully traverses the rejection.

Independent claim 1 distinguishes over Funston at least by reciting, “the controller sets power consumption of lighting of the I/O system in response to a signal from the camera module indicating an ambient light level.”

Funston is directed to cameras with color cast indicators that improve the ability of a photographer to take photographs having a desired color balance. Funston is not directed to and does not suggest control of power consumption in response to a signal indicating an ambient light level. Accordingly, claim 1 is patentable over Funston.

Claims 3 and 5-10 depend from claim 1 and are patentable over Funston for at least the same reasons that claim 1 is patentable over Funston.

Claim 11 distinguishes over Funston at least by reciting, “adjusting power consumption of lighting of an I/O system according to the ambient level measured by the camera module.” As noted above, Funston is directed to providing indications of color cast or temperature and fails to suggest controlling power consumption according to a measured ambient light level. Accordingly, independent claim 11 and claims 13-17, which depend from claim 11, are patentable over Funston.

Independent claim 18 is amended to include the limitations of now canceled claim 19. Amended claim 18 distinguishes over Funston at least by reciting, “the dedicated ambient light sensor and the array of pixel sensors are integrated into a single semiconductor chip.”

Funston does not disclose integrating an ambient light sensor and an array of pixel sensors in a single semiconductor chip. In regard to similar language originally found in now-canceled claim 19, the Examiner indicated that “integrating parts is a routine skill in the art,” and “It would have been obvious ... to integrate the ambient light sensor and the array of pixels in order to make the device more compact.” Applicant respectfully disagrees because the different types of sensors have generally been associated with different systems. In particular, pixel sensors have generally been associated with imaging systems, and sensors for ambient light levels have been associated with systems such as

displays where ambient light levels affect visibility. (Applicant also notes that claim 18 recites “a dedicated ambient light sensor that measures an ambient light level” as opposed to sensors that measure color cast or temperature.) Accordingly, it would not have been obvious to integrate sensors normally associated with different systems into a single chip. Further, pixel sensors and ambient light sensors are similar in fabrication so that both types of sensors can be readily combined in a single chip. Funston fails to suggest this advantage of the integration.

Accordingly, claim 18 and claim 20, which depends from claim 18, are patentable over Funston.

For the above reasons, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 102.

Claims 1, 2, 4, 11, and 12 were rejected under 35 U.S.C. § 103(a) as unpatentable over European Pat. Pub. No. EP1227642 (Eberle) in view of U.S. Pat. App. Pub. No. 2003/0146372 (Hsish). Applicant respectfully traverses the rejection.

Claim 1 distinguishes over the combination of Eberle and Hsish at least by reciting, “the controller sets power consumption of lighting of the I/O system in response to a signal from the camera module indicating an ambient light level.”

Eberle is directed to systems such as mobile telephones having lighted controls and to automatic control of the lighting of the controls according to the ambient light conditions. However, Eberle does not disclose or suggest a camera module measuring ambient light for use in such control.

Hsish is cited for disclosing a camera module that measures ambient light. In particular, Fig. 1 of Hsish illustrates an image sensor 100, which may be part of a mobile telephone such as shown in Figs. 1A, 1B, and 1C of Hsish. Paragraphs [0044] and [0046] of Hsish describe that sensor 100 can be used to measure the ambient light level and spectral distribution.

It would not have been obvious to combine the lighting control of Eberle with the camera module measurements of Hsish because the combination of Eberle and Hsish fails to suggest mixing the distinct functions of imaging and I/O systems. For example, although Hsish discloses a camera system specifically suited for a mobile telephone, Hsish only discloses use of ambient light measurement for control of imaging functions such as exposure and balance control. Hsish, which was filed after the publication of Eberle, failed to make the connection between the separate functions of imaging and I/O systems. Further, Eberle and Hsish do not provide any linkage that would motivate one of skill in

the art at the time the present invention was made to use systems and measurements that were specifically for imaging in a system for control of power consumption in the I/O interface. Accordingly, claim 1 is patentable over the combination of Eberle and Hsish.

Claims 2 and 4 depend from claim 1 and are patentable over Eberle and Hsish for at least the same reasons that claim 1 is patentable over Eberle and Hsish.

Independent claim 11 distinguishes over the combination of Eberle and Hsish at least by reciting, "adjusting power consumption of lighting of an I/O system according to the ambient level measured by the camera module." As noted above, the combination of Eberle and Hsish fails to establish or to suggest a link between camera module measurements and control of the power consumption of I/O systems. Accordingly, claim 11 and claim 12, which depends from claim 11, are patentable over the combination of Eberle and Hsish.

For the above reasons, Applicant requests reconsideration and withdrawal of the rejection under 35 U.S.C. § 103.

Claim 19 was rejected under 35 U.S.C. § 103(a) as unpatentable over Funston. Claim 19 is canceled.

Claim 21 is added. New claim 21 depends from claim 1 and is patentable for at least the same reasons that claim 1 is patentable.

For the above reasons, Applicant respectfully requests allowance of the application including claims 1-18, 20, and 21.

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